millimetre; it should therefore be considered rather a matured Copepod than the earliest form of such a one. If it belongs to a Copepod it must spring from an unknown gigantic species of a still unknown family; and it is rather strange that this gigantic species has not once fallen into my net during the course of many years.

Itajahy, St. Catherina, Brazil.
June, 1877.

LVI.—*Notes on a Collection of Japanese Sea-Fishes.*

By Dr. A. Günther, F.R.S.

A collection of fishes, formed by H. Batson Joyner, Esq., at Tokei, Japan, and presented by him to the British Museum, contained an unusually great proportion of interesting species, several of which are identical with those collected during the expedition of H.M.S. 'Challenger' and noticed in Ann. & Mag. Nat. Hist. 1877, xx. p. 433, whilst a few others appear to be undescribed and will be noticed hereafter.

This collection offers additional confirmation of a fact to which I have repeatedly drawn attention in the 'Catalogue of Fishes' and on subsequent occasions, viz. that there exists the greatest similarity between the marine fauna of temperate Japan and that of the Mediterranean and adjacent parts of the Atlantic, Mr. Joyner's collection containing not less than eight species identical in both seas, viz. *Rhina squatina*, *Pteroplatea hirundo*, *Beryx splendens*, *Beryx decadactylus*, *Hoplostethus mediterraneum*, *Trachurus trachurus*, *Brama Raii*, *Exocœtus lineatus*.

Sebastes Joyneri, sp. n.

D. $\frac{13}{15}$. A. $\frac{3}{7}$. L. lat. ca. 60.

The height of the body is equal to the length of the head, and one third of the total length (without caudal); scales very thin, scarcely serrate, a little smaller above the lateral line than below it; on the upperside of the head they advance to the nostrils and cover the præorbital and maxillary. Snout short, three fourths of the diameter of the eye, which is three tenths of the length of the head, and exceeds by one third the width of the interorbital space, which is flat. Upper surface of head smooth, scarcely armed, the two occipital ridges very low and terminating in short spines; præorbital with two flat spines; præoperculum with five spines,

the second from above being the longest, and one third of the diameter of the eye; operculum with two spines, the upper of which is the longest. Teeth in narrow villiform bands, in the jaws, on the vomerine and palatine bones; the vomerine teeth form a triangular patch. The maxillary does not reach to the vertical from the middle of the eye. The fourth dorsal spine is the longest, twice and a quarter in the length of the head. Anal spines stronger than those of the dorsal, the second anal spine being shorter than the third dorsal. Probably red (in life), with five brown cross bars on the back and the dorsal fin, the three anterior ones descending a little below the lateral line. Fins immaculate. Pharynx uncoloured.

Two specimens, 9 inches long.

Mugil Joyneri, sp. n.

D. 4 | $\frac{1}{9}$. A. $\frac{3}{8}$. L. lat. 40. L. transv. 14.

The height of the body is less than the length of the head, which is two ninths of the total (without caudal); eye small: its diameter is one seventh, the width of the interorbital space more than one third of the length of the head. Adipose eyelid none; præorbital emarginate and denticulated; snout longer than the orbit; extremity of the maxillary visible. There are eighteen scales between the snout and the origin of the spinous dorsal; no elongate scale in the axil. Dorsal fins equal in height; the spines are rather slender, the length of the first being rather more than three fourths of the postorbital part of the head; it is much nearer to the end of the snout than to the base of the caudal fin. The first two rays of the soft dorsal are scaly, the rest of the fin being devoid of scales; anal scaly anteriorly, as high as the soft dorsal, and commencing in advance of that fin. Caudal notched, one seventh of the total length. Pectoral two thirds of the length of the head. Axil without spot.

Two specimens, 12 inches long.

Cynoglossus Joyneri, sp. n.

D. 106–107. A. 79. L. lat. 85.

Three lateral lines on the left side; on the level of the end of the abdominal cavity the upper and lower lines are separated from the middle by thirteen rows of scales; four series of scales between the dorsal fin and the upper lateral line, and four between the anal and lower lateral line. No lateral line on the right side. All the scales on the left side strongly

ctenoid; those of the blind side are nearly smooth on the anterior half of the body, and more conspicuously serrate on the posterior. One nostril situated between the eyes, the other above the lip. Eyes very small, the upper slightly in advance of the lower; interorbital space equal to the width of the orbit. Snout contained twice and two thirds in the length of the head. Angle of the mouth much nearer to the end of the snout than to the hind margin of the gill-cover behind the eye. Tail not much elongate. The height of the body is two sevenths of the total length (without caudal), the length of the head two elevenths. Brownish, mottled with darker.

Two specimens, $9\frac{3}{4}$ inches long.

Harpodon microchir, sp. n.

D. 14. A. 14. V. 9.

This gigantic species of *Harpodon* differs from *H. nehereus* in having a second distinct band of palatine teeth within the first one, and in having the pectoral fin very short. The tubes of the lateral line are narrow and elongate; the basal half of the adipose fin is covered with scales. The interior of the mouth and gill-cavity is black.

A single specimen, 27 inches long.

BIBLIOGRAPHICAL NOTICE.

Thesaurus Devonico-Carboniferus: the Flora and Fauna of the Devonian and Carboniferous Periods. By J. J. Bigsby, M.D., F.R.S., &c. 4to. 447 pages. Van Voorst: London, 1878.

Nine years ago we had the pleasure of announcing the completion of Dr. Bigsby's 'Thesaurus Siluricus' *, a work of long labour and sound knowledge and of great value to the geological world. This respected and veteran geologist has now accumulated a still more ample systematic treasury of fossil genera and species, namely those of both the Devonian and the Carboniferous systems of strata in all parts of the world. He has arranged them, like those of his Silurian 'Thesaurus,' in a tabular form, showing the authorities and references for the names, and the horizons, recurrences, and localities of the fossils. He takes pleasure in mentioning that the publication of both of these great works has been aided by grants from the Royal Society.

The organic remains of the Devonian rocks, arranged in natural classification, occupy an elaborate table of 106 pages. Their localities

* Ann. & Mag. Nat. Hist. ser. 4, vol. iii. (1869) p. 314.